Detailed Action

This Office action is in response to Applicant's communication filed on December 16, 2009.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 18, 2009 has been entered.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given by Attorney Jeremy B. Berman, Reg. No. 60,582 on May 12, 2011.

The application is amended as follows:

The following listing of claims will replace all prior versions and listing in the application.

IN THE CLAIMS:

1. (Currently Amended) A communications system comprising:

a plurality of data storage devices, each of the plurality of data storage devices using at least one of a plurality of operating protocols, at least one data storage device communicating using multiple operating protocols;

a plurality of mobile wireless communications devices for accessing said at least one data storage device, each mobile wireless communications device communicating using at least one of the plurality of operating protocols; and

a protocol interface device comprising

a front-end proxy module for communicating with said plurality of mobile wireless communications devices using respective operating protocols; and

a protocol engine module for communicating with said plurality of data storage devices using respective operating protocols,

determining whether a given data storage device of said plurality of data storage devices ~~thereof~~ communicates using multiple operating protocols,

selecting a single supported operating protocol for communicating with the given data storage device of said plurality of data storage devices ~~thereof~~ if only a single operating protocol is supported by the given data storage device ~~thereby~~, and

selecting a desired operating protocol for communicating with the given data storage device of the plurality of data storage devices ~~thereof~~ from the multiple operating protocols if multiple operating protocols are supported by the given data storage device ~~thereby~~;

said protocol engine module selecting the desired operating protocol based upon a ranking of the plurality of operating protocols, the ranking being based upon a total number of protocol-supported elements by each of the plurality data storage devices.

2. (Canceled)

3. (Canceled)

4. (Original) The communications system of Claim 1 wherein said protocol interface device further comprises a memory connected to said protocol engine module for storing per-account information associated with each mobile wireless communications device; and wherein said protocol engine module further selects the desired operating protocol based upon the per-account information for a given wireless communications device.

5. (Original) The communications system of Claim 1 wherein said front-end proxy module and said protocol engine module communicate using a common interface protocol able to represent a desired number of protocol-supported elements for a desired operating protocol.

6. (Original) The communications system of Claim 1 wherein said plurality of data storage devices, said plurality of mobile wireless communications devices, and said protocol interface device process electronic mail (e-mail) messages.

7. (Original) The communications system of Claim 1 wherein said mobile wireless communications devices send access requests; and wherein said data storage devices send data responsive to access requests.

8. (Currently Amended) The communications system of Claim 7 wherein at least one of said data storage devices is for electronic mail (e-mail) messages; and wherein the at least one ~~e-mail~~ storage device for e-mail messages responds to an access request with a root folder and target e-mailbox capabilities.

9. (Original) The communications system of Claim 1 wherein said protocol interface device generates an error responsive to at least one non-supported operating protocol.

10. (Original) The communications system of Claim 1 further comprising a wide area network (WAN) connecting at least one of said mobile wireless communications devices with said protocol interface device.

11. (Original) The communications system of Claim 1 further comprising a wide area network (WAN) connecting at least one of said data storage devices with said protocol interface device.

12. (Currently Amended) A protocol interface device for interfacing a plurality of mobile wireless communications devices with a plurality of data storage devices, each of the mobile wireless communications devices and the data storage devices ~~each~~ communicating using at least one of a plurality of operating protocols, and at least one data storage device communicating using multiple operating protocols, the protocol interface device comprising:

a front-end proxy module for communicating with the plurality of mobile wireless communications devices using respective operating protocols;

a memory; and

a protocol engine module connected to said memory and cooperating with said memory for communicating with the plurality of data storage devices using respective operating protocols, determining whether a given storage device of the plurality of data storage devices ~~thereof~~ communicates using multiple operating protocols,

selecting a single supported operating protocol for communicating with the given data storage device of the plurality of data storage devices ~~thereof~~ if only a single operating protocol is supported by the given data storage device ~~thereby~~, and

selecting a desired operating protocol for communicating with the given data storage device of the plurality of data storage devices ~~thereof~~ from the multiple operating protocols if multiple operating protocols are supported by the given data storage device ~~thereby~~;

said protocol engine module selecting the desired operating protocol based upon a ranking of the plurality of operating protocols, the ranking being based upon a total number of protocol-supported elements by each of the plurality data storage devices.

13. (Canceled)

14. (Currently Amended) The protocol interface device of Claim 12, wherein ~~further comprising a~~ the memory connected to said protocol engine module stores ~~for storing~~ per-account information associated with each mobile wireless communications device; and wherein said protocol engine module further selects the desired operating protocol based upon the per-account information for a given mobile wireless communications device.

15. (Original) The protocol interface device of Claim 12 wherein said front-end proxy module and said protocol engine module communicate using a common interface protocol able to represent a desired number of protocol-supported elements for a desired operating protocol.

16. (Original) The protocol interface device of Claim 15 wherein the common interface protocol is able to represent all protocol-supported elements for a most capable operating protocol.

17. (Original) The protocol interface device of Claim 12 wherein the plurality of data storage devices, the plurality of mobile wireless communications devices, the front-end proxy module, and the protocol engine module process electronic mail (e-mail) messages.

18. (Currently Amended) A protocol interface device for interfacing a plurality of communications devices with a plurality of data storage devices, each of the communications devices and the data storage devices ~~each~~ communicating using at least one of a plurality of operating protocols, and at least one data storage device communicating using multiple operating protocols, the protocol interface device comprising:

a front-end proxy module for communicating with the plurality of ~~mobile wireless~~ communications devices using respective operating protocols;

a memory; and

a protocol engine module connected to said memory and cooperating therewith for

communicating with the plurality of data storage devices using respective operating protocols,

determining whether a given data storage device of the plurality of data storage devices ~~thereof~~ communicates using multiple operating protocols,

selecting a single supported operating protocol for communicating with the given data storage device of the plurality of data storage devices ~~thereof~~ if only a single operating protocol is supported by the given data storage device ~~thereby~~, and

selecting a desired operating protocol for communicating with the given data storage device of the plurality of data storage devices ~~thereof~~ from the multiple operating protocols if multiple operating protocols are supported by the given data storage device ~~thereby~~;

said protocol engine module selecting the desired operating protocol based upon a ranking of the plurality of operating protocols, the ranking being based upon a total number of protocol-supported elements by each of the plurality data storage devices.

19. (Canceled)

20. (Currently Amended) The protocol interface device of Claim 18, wherein ~~further comprising a~~ the memory connected to said protocol engine module stores ~~for storing~~ per-account information associated with each mobile wireless communications device; and wherein said protocol engine module further selects the desired operating protocol based upon the per-account information for a given communications device.

21. (Original) The protocol interface device of Claim 18 wherein said front-end proxy module and said protocol engine module communicate using a common interface protocol able to represent a desired number of protocol-supported elements for a desired operating protocol.

22. (Original) The protocol interface device of Claim 18 wherein the common interface protocol is able to represent all protocol-supported elements for a most capable operating protocol.

23. (Original) The protocol interface device of Claim 18 wherein the plurality of data storage devices, the plurality of communications devices, the front-end proxy module, and the protocol engine module process electronic mail (e-mail) messages.

24. (Currently Amended) A method for interfacing a plurality of mobile wireless communications devices with a plurality of data storage devices, each of the mobile wireless communications devices and the data storage devices ~~each~~ communicating using at least one of a plurality of operating protocols, and at least one data storage device communicating using multiple operating protocols, the method comprising:

providing a front-end proxy module for communicating with the plurality of mobile wireless communications devices using respective operating protocols;

providing a protocol engine module for communicating with the front-end proxy module and for communicating with the plurality of data storage devices using respective operating protocols,

determining whether a given data storage device of the plurality of data storage devices ~~thereof~~ communicates using multiple operating protocols,

selecting a single supported operating protocol for communicating with the given data storage device of the plurality of data storage devices ~~thereof~~ if only a single operating protocol is supported by the given data storage device ~~thereby~~, and

causing the protocol engine module to select a desired operating protocol for communicating with the given data storage device from the multiple operating protocols;

the desired operating protocol being selected based upon a ranking of the plurality of operating protocols, the ranking being based upon a total number of protocol-supported elements by each of the plurality data storage devices.

25. (Canceled)

26. (Original) The method of Claim 24 wherein the protocol engine module further selects the desired operating protocol based upon per-account information associated with a given one of the mobile wireless communications devices.

27. (Original) The method of Claim 24 wherein the plurality of data storage devices, the plurality of mobile wireless communications devices, the front-end proxy module, and the protocol engine module process electronic mail (e-mail) messages.

28. (Currently Amended) A non-transitory computer-readable medium having computer-executable modules comprising:

a front-end proxy module for communicating with a plurality of mobile wireless communications devices using respective operating protocols; and

a protocol engine module for communicating with a plurality of data storage devices using respective operating protocols, and for communicating with the front-end proxy module;

at least one data storage device communicating using multiple operating protocols, and the protocol engine module

determining whether a given data storage device of the plurality of data storage devices ~~thereof~~ communicates using multiple operating protocols,

selecting a single supported operating protocol for communicating with the given data storage device of the plurality of data storage devices ~~thereof~~ if only a single operating protocol is supported by the given data storage device ~~thereby~~, and

selecting a desired operating protocol for communicating with the given data storage device of the plurality of data storage devices ~~thereof~~ from the multiple operating protocols if multiple operating protocols are supported by the given data storage device ~~thereby~~;

the protocol engine module selecting the desired operating protocol based upon a ranking of the plurality of operating protocols, the ranking being based upon a total number of protocol-supported elements by each of the plurality data storage devices.

29. (Canceled)

30. (Currently Amended) The non-transitory computer-readable medium of Claim 28 wherein the protocol engine module further selects the desired operating protocol based upon per-account information associated with a given one of the mobile wireless communications devices.

31. (Currently Amended) The non-transitory computer-readable medium of Claim 28 wherein the plurality of data storage devices, the plurality of mobile wireless communications devices, the front-end proxy module, and the protocol engine module process electronic mail (e-mail) messages.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Friday 7:30AM to 4:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Joshua Joo/
Primary Examiner, Art Unit 2445